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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,759	04/20/2001	Filippo Pironti	1085-2	1279

23869 7590 09/06/2002

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EXAMINER

NGUYEN, TAM M

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 09/06/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,759

Applicant(s)

PIRONTI ET AL.

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Response to Amendment

The rejection of claims 1-15 under 35 USC § 102(b) and 103(a) are withdrawn by the examiner in view of the amendment filed on July 22, 2002.

A new Office Action follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5 and 7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable by Shu et al. (6,125,653).

Shu discloses a process for producing liquefied natural gas from a gas mixture comprising methane, ethane, and propane. The process includes steps of cooling the gas mixture which is then distilled in a demethanizer column to produce a methane-rich stream and an ethane/propane-rich stream. The methane rich stream is then compressed, cooled at a first temperature and pressure, and expanded by turbo expanders to provide a methane-cooling source for a cryogenic heat exchanger. After the expanding step, the methane rich stream has a second temperature and pressure that are lower than the first temperature and pressure. The ethane/propane rich stream is then passed into a de-ethanizer column to distill ethane from propane. (See entire document)

Shu does not specifically disclose that the gas mixture contains 40-80 % or 50-75% by mole of methane, 10-40% or 15-40% by mole of ethane, and 0.5-10% or 1-4 % by mole of propane. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Shu process by using a feed gas having the claimed composition because Shu discloses that the feed gas for the process may comprise any gaseous mixture of hydrocarbons containing at least some methane. Therefore, one having ordinary skill in the art would employ any gas mixture including the claimed gas feed in the process of Shu and it would be expected that the results would be the same or similar when using the claimed feed gas in the process of Shu. (See col. 2, lines 22-25)

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Shu does not specifically disclose the percentage of purity of methane, ethane, and propane in recovery streams. However, the modified process of Shu is similar to the claimed process in term of feedstock, distilling, cooling, pressuring, and expanding. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Shu by operating the process under conditions to produce a stream of methane, ethane, and propane with the purity as claimed because one of ordinary skill in the art would determine to control and operate the distillation columns at effective conditions to arrive at the claimed purity if the claimed purity of methane, ethane, and propane is desirable.

Response to Arguments

The argument that the process of Shu would likely be inoperable for gas streams having hydrocarbon components as set forth in the amended claims is noted. However, the argument is not persuasive because the Shu feedstock contains heavier hydrocarbons such as ethane and propane as claimed. In the Shu process, the heavier hydrocarbons would be separated from methane before the step of cooling and expanding of the methane rich stream. In addition, Shu teaches that the feed gas for the process may comprise any gaseous mixture of hydrocarbons containing at least some methane. Therefore, one having ordinary skill in the art would employ any gas mixture including the claimed gas feed in the process of Shu and it would be expected that the results would be the same or similar when using the claimed feed gas in the process of Shu. (See col. 2, lines 22-25)

The argument that the present invention heats the demethanizer overhead stream, which is in direct contrast to the process of Shu which cools its demetahnizer overhead at exchanger

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114 is noted. However, the argument is not persuasive because the limitation of heating the demethanizer overhead stream is not in the claims.

The argument that Shu does not disclose the purity of the recovery streams is noted. However, the argument is not persuasive because the examiner maintains that the modified process of Shu is similar to the claimed process in term of feedstock, distilling, cooling, pressuring, and expanding. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Shu by operating the process under conditions to produced a stream of methane, ethane, and propane with the purity as claimed because one of ordinary skill in the art would determine to control and operate the distillation columns at effective conditions to arrive at the claimed purity if the claimed purity of methane, ethane, and propane is desirable.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (703) 305-7715.

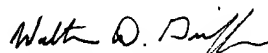
The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703 308 4311. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for regular communications and (703) 305-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tam M. Nguyen
Examiner
Art Unit 1764

Tam Nguyen/ TN
September 3, 2002


Walter D. Griffin
Primary Examiner